AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims

Claim 1 (Currently Amended): An electron beam apparatus having an electron analyzer, comprising:

an illumination optical system consisting of lenses and deflection means for illuminating electrons at a specimen, the electrons being produced and accelerated from an electron gun;

an imaging optical system for directing electrons transmitted through the specimen positioned within a magnetic field of an objective lens; and

said electron analyzer having a detection system for detecting the imaged electrons and energy selection means for energy-dispersing the detected electrons and selecting electrons having a certain energy,

wherein an accelerating voltage of the electron gun is varied to shift the detected energy of electrons and signals supplied to the lenses and deflection means of the imagingoptical system are corrected for focus and position using amounts of correction each obtained by multiplying an energy shift value corresponding to a variation in the accelerating voltage by a corrective coefficient.

Claim 2 (Original): An electron beam apparatus having an electron analyzer as set forth in claim 1, wherein the corrective coefficients can be calibrated.

Claim 3 (Original): An electron beam apparatus having an electron analyzer as set forth in claim 1, wherein corrective coefficient KI of the lenses and corrective coefficients KDx and KDy of the deflection means are calculated based on equations

$KI = (I_2 - I_1) / (E_2 - E_1)$

$KDx = (IX_2 - IX_1) / (E_2 - E_1)$

$KDy = (IY_2 - IY_1) / (E_2 - E_1)$

where I_1 is the value of the current through the corrective lens and IX_1, IY_1 are the values of the current through the corrective deflection means when the energy shift is a first energy shift value of E_1, I_2 is the value of the current through the corrective lens, and IX_2, IY_2 are the values of the current through the corrective deflection means when the energy shift is a second energy shift value of E_2.

Claim 4 (Original): An electron beam apparatus having an electron analyzer as set forth in claim 3, wherein lens-correcting value I when the energy shift assumes a value of E and correcting values IX and IY for the deflection means are found using equations

$I = KI\ E$

$IX = KDx\ \ E\ \ IY = KDy\ E$

Claim 5 (Original): An electron beam apparatus having an electron analyzer as set forth in claim 1, wherein the energy selection means for selecting electrons having a certain energy is an analyzer for energy-dispersing electrons by the use of a magnetic field.

Claim 6 (Original): An electron beam apparatus having an electron analyzer as set forth in claim 1, wherein the energy selection means for selecting electrons having a certain energy is an analyzer for energy-dispersing electrons by the use of an electric field.

Claim 7 (Currently Amended): A method of controlling lenses in an electron beam apparatus having an illumination optical system consisting of lenses and deflection means for illuminating electrons at a specimen, the electrons being produced and accelerated from an electron gun, an imaging optical system for imaging electrons transmitted through the specimen positioned within a magnetic field of an objective lens, and the electron

analyzer having a detection system for detecting the imaged electrons and energy selection means for energy-dispersing the detected electrons and selecting electrons having a certain energy, said method comprising the steps of:

varying an accelerating voltage of the electron gun to shift the detected energy of electrons; and

correcting signals supplied to the lenses and deflection means of the illumination optical system using amounts of correction for focus and position each obtained by multiplying an energy shift value corresponding to a variation in the accelerating voltage by a corrective coefficient.